THE

CHEMIST

April, 1960

VOLUME XXXVII

NUMBER 4

Dr. Charles G. Overberger, F.A.I.C.

(*See pages* 122 *and* 125)

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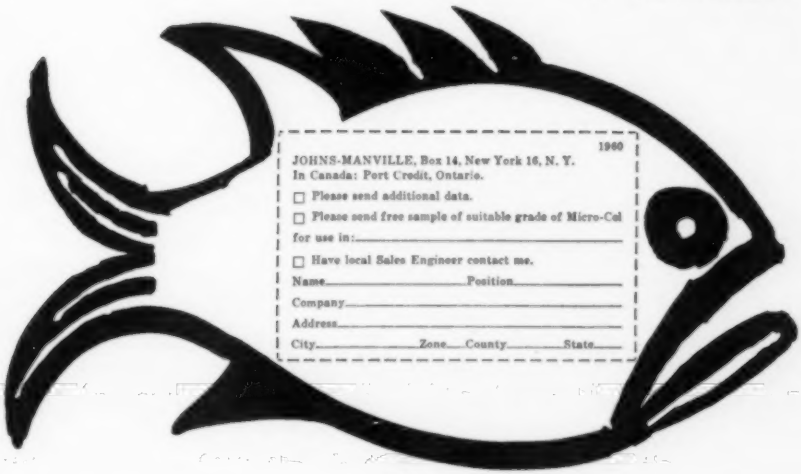

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Publication of

THE AMERICAN INSTITUTE OF CHEMISTS, INC.

60 East 42nd street, New York 17, N. Y.

Entered as second class matter April 8, 1936 at the Post Office at New York, N. Y., under Act of August 24, 1912. Second class postage paid at New York, N. Y. Issued monthly.

Subscription price, $3.00 a year to Members, $4.00 to Non-Members. Single copy, this issue, $0.35.

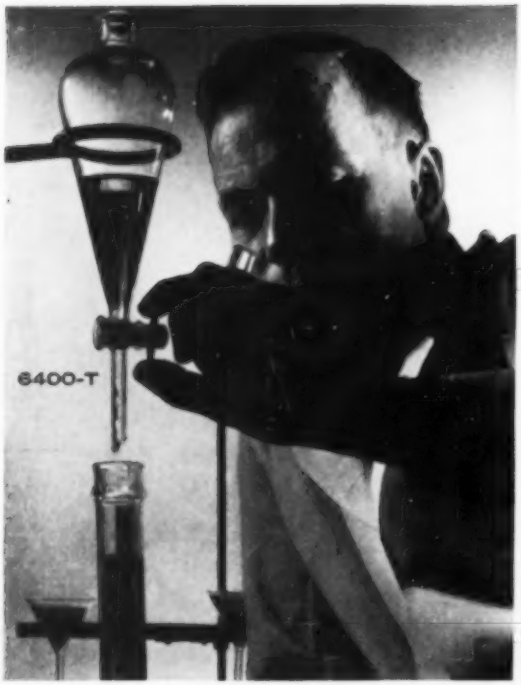
Vol. XXXVII April, 1960 Number 4

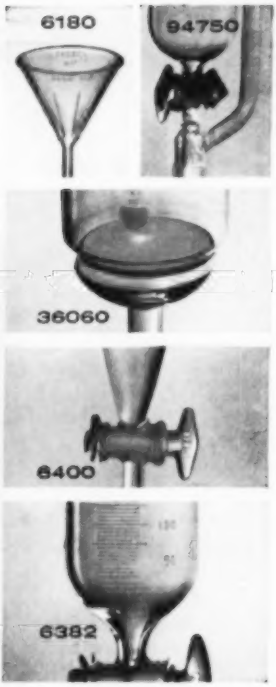
IN THIS ISSUE

TO COME IN MAY

Dr. Max Tishler, F.A.I.C., president, Merck, Sharp & Dohme Research Laboratories, Rahway, N. J., who will receive the Honor Scroll of the New Jersey Chapter in April, will present, "The Chemist in Medicinal Research." The Annual Report of the AIC Secretary, and other pertinent information will be covered as space permits.

Recommended Suppliers and Services





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PROGRAM

37th Annual Meeting

THE AMERICAN INSTITUTE OF CHEMISTS

Place: The Radisson Hotel, Minneapolis, Minn.
Time: May 11-13, 1960.
General Theme: "The Chemist in an Expanding Universe."

Wednesday, May 11, 1960

10:00 a.m.-5:30 p.m. Registration (Mezzanine).

	Pre-Registration	*Registration at Door*
AIC Members	$5.00	$6.00
Non-Members	6.00	7.00
Students	1.00	1.00

(There is no registration fee for wives of registrants)

1:00 p.m. Tour of the fabulous Minnesota Mining & Manufacturing Company's Central Research Laboratories in St. Paul. Inquire at AIC Registration desk. (Transportation provided. No charge.)

5:30 p.m. The President's Reception to the Officers, National Councilors, Members of the Annual Meeting Committees, and their wives. (Gold Room).

6:30 p.m. Dinner Meeting of the Board of Directors, Council and Annual Meeting Committees (Gold Room). (See Ladies' Program for wives of those attending this dinner.)

Thursday, May 12

9:00 a.m.-5:00 p.m. Registration. (Mezzanine).
9:00 a.m. Coffee Hour (Mezzanine). (No charge).
10:00 a.m. Annual AIC Business Meeting (Gold Room).

AGENDA

Report of the President, Dr. Wayne E. Kuhn
Report of the Chairman of the Board, Dr. Emil Ott
Report of the Treasurer, Dr. Frederick A. Hessel
Report of the Secretary, John Kotrady
Reports of the Committees
Reports of the Chapters
Announcement of the election of officers and councilors
Old business
New business

12:15 p.m. Keynote Luncheon (Gold Room). (Tickets $5.00).
Presiding: Dr. Wayne E. Kuhn, Retiring President,
The American Institute of Chemists.
Introduction of Speaker: Dr. Milton Harris, Incoming President,
The American Institute of Chemists.
Speaker: The Honorable Orville E. Freeman,
Governor, State of Minnesota.

2:00 p.m. First Professional Session (Gold Room).
Theme: The Chemist and the Universe.
Presiding: Dr. Robert Brasted, Chemistry Department, University of Minnesota, and Chairman, Minnesota Section, American Chemical Society.

2:15 p.m. "The Chemist and His Country," Victor Cohn, Science Writer, *Minneapolis Star and Tribune*.

3:00 p.m. "Chemistry and the Naval Environment." Rear Admiral Rawson Bennett, Chief of Naval Research, Office of Naval Research.

3:45 p.m. "The Chemist, the Stratosphere, and Beyond," Drs. Jean and Jeannette Piccard, University of Minnesota.

6:00 p.m. Reception for the Gold Medalist. Courtesy of Abbott Laboratories. (Mezzanine).

7:00 p.m. Gold Medal Banquet (Gold Room). (Tickets $10.00). (Dress Optional. Black Tie for Dais).
Toastmaster: Dr. Wayne E. Kuhn, retiring AIC President.
Speaker for the Medalist: Dr. Lloyd H. Reyerson, Professor, University of Minnesota.
Presentation of the Gold Medal: Dr. John H. Nair, Consultant, Summit, N. J., and Chairman, Committee on Gold Medal Award.
Medal Acceptance Address: Dr. Ernest H. Volwiler, Chairman of the Board, Abbott International, and Consultant, Abbott Laboratories. "Scientific Waste."

Friday, May 13

8:00 a.m. Council Breakfast for AIC Officers and Councilors. (Room 115).

8:00 a.m. Coffee Hour (Mezzanine). (No charge).

9:00 a.m.-2:00 p.m. Registration (Mezzanine).

9:00 a.m. Second Professional Session (Gold Room).
Theme: "The Chemist and His Organization."
Presiding: Mr. Lloyd A. Hatch, Vice President, New Product Development, Minnesota Mining & Mfg. Co.

9:15 a.m. "Research on Research," Dr. Bruce S. Old, Vice President, Arthur D. Little, Inc.

10:00 a.m. "Professional Attitudes," Dr. Sidney M. Cantor, Sidney M. Cantor Associates.

10:45 a.m. "The Problems of a Professional in a Large Organization," Prof. Roy Francis, Department of Sociology, University of Minnesota.

12:15 p.m. Institute Luncheon (Gold Room). (Tickets $5.00).
Presiding: Dr. Emil Ott, Past President and Chairman of the Board, The American Institute of Chemists.
Announcement of Honorary Membership Awards for the Coming Year, Dr. John H. Nair, Chairman, Honorary Membership Committee.
President's Address: Dr. Wayne E. Kuhn, retiring AIC President.

2:00 p.m. Third Professional Session (Gold Room).
Theme: "The Chemist as a Professional."
Presiding: Dr. Milton Harris, Vice President for Research, The Gillette Co., and new President, AIC.
2:15 p.m. "What Management Expects of the Young Professional," Dr. Albert L. Elder, Director of Research, Corn Products Co., and President, American Chemical Society.
3:00 p.m. "The Essential Element—Individual Responsibility," Mr. E. E. Fogle, President, Union Carbide Chemicals Co.
3:45 p.m. Adjournment.

LADIES' PROGRAM

Ladies' Hospitality Headquarters (*Admiral Room*)

Wednesday, May 11, 1960

1:00 p.m. Tour of the fabulous Minnesota Mining & Manufacturing Company's Central Research Laboratories in St. Paul. (Transportation provided—no charge). Inquire at AIC Registration Desk.
5:30 p.m. The President's Reception for wives of Officers, National Councilors and Members of the Annual Meeting Committees (No charge). (Gold Room).
7:00 p.m. Dinner at the Chateau de Paris, Dyckman Hotel ($3.75 to $5.00 plus tip).
9:00 p.m. Bridge, canasta, conversation, coffee, in the Admiral Room.

Thursday, May 12

9:00 a.m. Coffee Hour (Mezzanine). (No charge).
10:00 a.m. Conducted tour of kitchens, model rooms, at Dayton's Department Store (No charge).
11:30 a.m. Luncheon and Style Show, Dayton's Sky Room ($1.50 plus tip).
1:45-3:00 p.m. Gallery tour; visit Old English Room; special showing of Minneapolis Art Institute, 201 E. 24th St. (Transportation provided). (No charge).
6:00 p.m. Reception for Gold Medalist (Mezzanine).
7:00 p.m. Gold Medal Banquet (Gold Room). (Tickets $10.00).

Friday, May 13

8:00 a.m. Breakfast (Coffee Shop. Dutch Treat).
Coffee Hour (Mezzanine). (No charge).
9:30 a.m. Tour of General Mills Betty Crocker Kitchens: three special test kitchens; demonstrations. (Transportation provided). (No charge).
12:15 p.m. Institute Luncheon (Gold Room). (Tickets $5.00).
2:00 p.m. Flower Tour (Transportation provided). (No charge).

Reservation forms may be obtained on request from The American Institute of Chemists, 60 E. 42nd St., New York 17, N. Y.

Annual Meeting Committees

General Chairman: Morris Kenigsberg, The Toni Company, St. Paul 1, Minn.
Program: Dr. Milton Harris, co-chairman, The Gillette Company, Boston, Mass. Morris Kenigsberg, co-chairman.
Public Relations: Albert Holler, chairman. Twin City Testing & Engineering Labs., St. Paul 14, Minn.
Arrangements: Michael H. Baker, Chairman. M. H. Baker Co., Minneapolis 1, Minn.
Registration & Finance: W. W. Benton, Chairman. Economics Labs., Inc., St. Paul 1, Minn.
Ladies' Program: Mrs. John L. Wilson, chairman.
Host for the Meeting: Twin City Chapter: Dr. Joseph Abere, chairman. Minnesota Mining & Mfg. Co., St. Paul 6, Minn.

The Manufacturing Chemists' Association will hold its 88th Annual Meeting, June 9-11, at The Greenbrier in White Sulphur Springs, W. Va.

The National Inventions Conference & Exhibition is being offered by the Cleveland Engineering Society, June 20-24. Information on how to exhibit inventions, processes, or patents is available from the Cleveland Engineering Society, 3100 Chester Ave., Cleveland 14, Ohio.

The American Astronautical Society is meeting in Seattle, Washington, August 8-11, 1960. Technical papers are invited. For information: M. E. Phares, Boeing Airplane Co., Mail Stop 09-08, P.O. Box 3707, Seattle, Washington.

The Fifth International Congress on Nutrition will be held at the Sheraton Park and Shoreham Hotels, in Washington, D.C., September 1-7, 1960. For information, address the Congress at 9650 Wisconsin Ave., Washington 14, D.C.

EDITORIAL

A Good Time to Invite Your Friends Into the AIC

Dr. L. T. Eby, F.A.I.C.
Co-chairman, AIC Membership Committee

"THE AIC has good objectives and you will meet some fine people there."

This advice was given to the late Dr. Raymond E. Kirk, by one of his most admired professors. Dr. Kirk, F.A.I.C., who became dean of the Graduate School of Polytechnic Institute of Brooklyn, was long active on many AIC committees. He served as vice president. He wrote articles for THE CHEMIST, among which, "How the Chemist May Attain Professional Stature," became one of our most popular reprints. There are many other AIC members who, by participating, have found their membership to be a professionally rewarding experience.

The majority of AIC members are Fellows, who possess those qualifications of education, training, and experience which merit that title. A Fellow is recognized to be a professional chemist or chemical engineer at the highest level.

Provision has also been made for chemists and engineers of less experience. College graduates may become Associates. Those with degrees and four to ten years of experience may become Members. The AIC offers much to these younger people. It is a very democratic organization. It preserves the right of each member to express himself, and it welcomes the active participation of all.

Among the advantages of membership are a feeling of belonging to an influential, respected professional group; an opportunity for unrestrained discussion of professional problems; an appreciation of the many factors (and what to do about them) which lead to professional status, and the guidance, advice, friendship, and helpful cooperation of mature leaders of the profession.

Both the internal activities and the external influence of the AIC can be accelerated with increased membership and by the formation of more chapters. Therefore, the AIC this year has formed a "200 Club" to make the advantages of the AIC available to more professionally alert chemists and chemical engineers. The members of this Club are AIC members who have committed themselves to inviting at least ten qualified prospective members. The Club has room for more enthusiasts. Why not call or write and offer to belong?

Now is the time to invite your friends to join the AIC. Our annual dues (tax deductible) begin with our

fiscal year in May. Our 37th Annual Meeting (see program in this issue) will be held in Minneapolis, May 11-13. Come and invite your friends to come, if possible. A program will be sent on request. We will also be happy to send you or your friends information about the AIC.

Special AIC Announcements

Dr. Tishler to be Honored

The New Jersey Chapter will honor Dr. Max Tishler, F.A.I.C., president, Merck, Sharp & Dohme Research Laboratories, Rahway, N. J., with its Honor Scroll, at a dinner to be held April 20, at the Military Park Hotel, Newark, N. J. He is cited for his professional activities and for his leadership in research.

Dr. Overberger to Receive New York Chapter Scroll

Dr. Charles G. Overberger, F.A.I.C., head, Department of Chemistry, Polytechnic Institute of Brooklyn, Brooklyn 1, N. Y., will receive the Honor Scroll of the New York Chapter at a dinner meeting to be held May 26. He is cited, in part, for his devotion to chemistry as a profession, and for his promotion of professional attitudes in younger chemists.

To AIC Members

Election ballots for officers and councilors will be mailed to the membership April 11. The nominees will be those chosen by the membership on the Nomination ballot sent out in March. Please send in your vote promptly. The results of the election will be announced at the Annual Business Meeting to be held May 12, at the Radisson Hotel, Minneapolis, Minn.

AIC Social Hour in Cleveland

A Social Hour for AIC members and their friends, to be held in Cleveland, Ohio, during the American Chemical Society meeting, has been scheduled for Monday, April 11, at 5:30 p.m. It will be held in Parlor E, Statler Hilton Hotel.

The 200 Club

The 200 Club now has 203 members, but it is not yet satisfied with its geographical coverage! It would like to have volunteers from the major metropolitan areas of San Francisco, both Portlands, Columbus (Ohio), San Antonio, and Indianapolis. It would also like to have volunteers from any part of Vermont, Maine, Oklahoma, Colorado, New Mexico, and Puerto Rico. There are two states in which we have no members — Nevada and Wyoming! Please send names of chemists and chemical engineers there, so we can invite them to join the AIC.

Please volunteer or send your suggestions to Dr. L. T. Eby, co-chairman, AIC Membership Committee,

c/o The Enjay Co., Inc., 1141 E. Jersey St., Elizabeth, N. J., or to Martin B. Williams, chairman, Committee on New Chapters & Expansion, 1013 Pratt Ave., N.E., Huntsville, Ala.

The newest members of the 200 Club are:

Dale F. Behney, F.A.I.C., Akron, Ohio
Dr. E. M. Fettes, F.A.I.C., Trenton, N. J.
Dr. C. H. Fisher, F.A.I.C., New Orleans, La.
Dr. Maurice H. Fleysher, F.A.I.C., Buffalo, N. Y.
Dr. Howard H. Hoekji, F.A.I.C., Los Angeles, Calif.
Dr. Louise Kelley, F.A.I.C., Franklin, N. H.
Iro R. Lowery, F.A.I.C., Marianna, Florida
John Q. Miller, A.A.I.C., Huntsville, Ala.
Miss Margaret C. Perry, Milwaukee, Wis.
Oliver Sheffield, F.A.I.C., Dover, N. J.
Donald G. Slavin, A.A.I.C., Philadelphia, Pa.
David W. Young, F.A.I.C., Harvey, Ill.

Professional Appointments

April 5, 1960. Niagara Falls, N. Y. Red Coach Inn. Meeting of Niagara Chapter. Social Hour, 6:00 p.m. Dinner 7:00. Meeting 8:00. Speaker, AIC President, Dr. Wayne E. Kuhn. Subject, "AIC and Changing Times." For reservations: (Dinner $3.00) J. Frederic Walker, E. I. du Pont de Nemours & Co., Electrochemicals Dept., Niagara Falls, N. Y. (BU 5-7831, Ext. 421).

April 20, 1960. Newark, N. J. Military Park Hotel. Meeting of New Jersey Chapter. Honor Scroll Award Dinner. Social Hour, 6:00 p.m. Dinner, 7:00; Program 8:00. The Honor Scroll award will be presented to Dr. Max Tishler, F.A.I.C., president, Merck, Sharp & Dohme Research Labs. Student medals will be given to outstanding chemistry students in New Jersey Colleges. For reservations: Dr. John F. Mahoney, FUlton 1-5000, ext. 3254, or to Dr. Ralph M. Hill, Secretary, WAbash 5-1600, ext. 2140.

April 21, 1960. Minneapolis, Minn. Coleman's in Highland Park. Joint dinner meeting of Twin City Chapter and the American Institute of Chemical Engineers. Social hour 6:00 p.m. Dinner 7:00 p.m. Speaker: Dr. Walter S. Guthmann, president, Morton Chemical Co., Division of Morton Salt Co., Chicago, Ill. Subject: "A Chemical Executive Looks at Chemical and Engineering Education." For information, Dr. Joseph F. Abere, Minn. Mining & Mfg. Co., 2301 Hudson Road, St. Paul 6, Minn.

April 22, 1960. Chicago, Ill. Meeting of Chicago Chapter. Subject: "The Chemist in Industry." For information: David W. Young, Sinclair Research Labs., 400 E. Sibley Blvd., Harvey, Ill.

May 5, 1960. Philadelphia, Pa., Engineers' Club. Meeting of Philadelphia Chapter. Annual Student Award night. Outstanding senior students in chemistry and chemical engineering in colleges and universities in the area will be presented awards. Dinner, 6:30 p.m. Presentation of awards, 8 p.m. Speaker and topic to be announced. Deadline for reservations, May 3. For reservations: Dr. E. M. Kipp, Foote Mineral Co., Berwyn, Pa. (NIagara 4-6800).

May 11, 1960. Minneapolis, Minn. Radisson Hotel. The AIC President's Reception to the Officers, National Councilors, Members of the Annual Meeting Committee, and their wives 5:00 p.m.

May 11, 1960. Minneapolis, Minn. Radisson Hotel. Dinner Meeting of the AIC National Council and Board of Directors. Board meets at 6 p.m., Council at 6:30.

May 12-13, 1960. Minneapolis, Minn. Radisson Hotel. 37th Annual AIC Meeting. The Twin City Chapter will be our host. (See Program in this issue of THE CHEMIST.)

May 14, 1960. Orlando, Florida. Cherry Plaza Hotel. Joint luncheon meeting of Florida Chapter with the Florida Section of the American Chemical Society For information: Robert A. Nanz, Florida Chemists & Engineers, Inc., 64 Rugby Ave., Orlando, Fla.

June, 1960. (Day to be announced.) **Minneapolis, Minn.** Meeting of Twin City Chapter. Award of student medals. For information: Dr. Joseph F. Abere, Minn. Mining & Mfg. Co., 2301 Hudson Rd., St. Paul 6, Minn.

June 7, 1960. Meeting of Niagara Chapter. Student Medal presentations. For information: Dr. Howard W. Post, Chemistry Department, University of Buffalo, Buffalo 14, N. Y.

June 8, 1960. Chicago, Ill. Meeting of Chicago Chapter. Subject, "Social Responsibilities of the Chemist." For information: David W. Young, Sinclair Research Labs., 400 E. Sibley Blvd., Harvey, Ill.

May 11-12, 1961. Washington, D. C. Statler Hotel, 38th Annual AIC Meeting. The Washington Chapter will be our Host.

The American Vacuum Society will hold its 7th National Symposium Oct. 12-14, at the Cleveland-Sheraton Hotel, Cleveland, Ohio. For information: American Vacuum Society, Box 1282, Boston 9, Mass.

Committees of the American Library Association and the Special Libraries Association are cooperating to develop a Loan Collection of library classification schemes, covering science, law, medicine, technology, the social sciences and the humanities. Those who have developed special classification schemes are invited to contribute a copy of their work to: Dr. Jesse H. Shera, Curator, SLA Loan Collection, School of Library Science, Western Reserve University, Cleveland 6, Ohio.

The first of the exchange speakers from France to the American Section of the Societe de Chimie Industrielle, was Count Raoul de Vitry d'Avaucourt, president, Compagnie Pechiney de Produits Chimiques et Electrometallurgiques, who spoke on "Recent Advances of French Chemical Industry," at a meeting held at the Waldorf-Astoria, New York, N. Y., January 28. "The French chemical industry ranks third among the great national industries. It employs 230,000 workers, out of which 14,000 are engineers and staff, and it reaches a yearly turnover of 3 billion dollars. It ranks second in the Common Market and sixth in the world."

The 15th Purdue Industrial Waste Conference will be held May 3-5, 1960, in the Purdue Memorial Union Building, Purdue University, Lafayette, Indiana.

A College Course on the Profession of Chemistry

Dr. C. G. Overberger, F.A.I.C.

Head and Professor, Department of Chemistry, Polytechnic Institute of Brooklyn, Brooklyn, New York.

(Presented at the meeting of the New Jersey AIC Chapter, held at Rutgers University, December 15, 1959).

I TEACH a course in the spring semester, at Polytechnic Institute of Brooklyn, to first year graduate students and seniors in the Department of Chemistry, called, "The Profession of Chemistry." This course continues for 14 weeks, one hour per week.

My motivation for this course is somewhat personal and involved. I felt that I had had a fairly serious lack of understanding, when I was a senior and a graduate student, of what the chemical profession was like. It, therefore, seemed worthwhile to me to have an informal type of class in which I could discuss topics of interest to the students, as well as to myself. I wanted to acquaint these students with some current facts about the chemical profession, both in its educational and professional aspects.

I can here touch on only the high points of a number of topics which are covered. As far as possible, only the facts are presented in the course. I have not taken a stand on controversial issues. I believe that students should form their own opinions. It is impossible to teach any course of this kind without a certain bias, but the fact that I am both a professor and a scientist, and interested in research and teaching, already precludes a certain amount of bias. Although it is difficult to define the aims of such a course, I shall try.

My interests are primarily to educate the graduate student and the college senior as to what awaits him in the immediate future; to emphasize the role of a scientist in present day society; to point out the explosion curve of scientific achievement in a warning of what awaits us without adequate control of this explosion curve; and to emphasize the role of the scientist in demonstrating to the general public that he is not unlike any other ordinary person and that he is far from being the "Hollywood monster" that he is often pictured to be. I am eager to point out the opportunities and aids which are available to scientists, and finally, to acquaint my students with the services of present day chemical societies, primarily the American Chemical Society. This briefly represents what I wish to cover in such a course.

Education

I have started with a discussion of education and have talked first about high school education because it is a subject with which the students already have some acquaintance. I have emphasized the swing of the pendulum, in the last five years, in our understanding of the type of high school teaching that is required for us to teach science, math, and physics, effectively. In relation to the education which the average chemistry teacher is receiving, I have not tried to be derogatory but have merely indicated that it probably is on the weak side, indicating possible ways to strengthen it. Improvement in teacher certification is one of the requirements to improve the general attitude and the general level of high school teaching, as well as an increase in stipend which must accompany this increase in teacher certification requirements. I have also emphasized that scientists should voice their opinions with regard to improving secondary education and providing enriched schooling for those who are in a certain intellectual category.

I have tried to present the facts as they are now; what still has to be done, and what can be done in the future, stressing to them that they have a responsibility, or will have a responsibility, as citizens of a community to participate in future action.

I have then discussed educational systems in colleges, and, to compare the American system with the European system, mentioned that in Europe, selection at an early age determines the situation somewhat more than it does in this country, and also that in the United States there are a wide variety of schools with different admission standards, so that almost anyone with a high school education can find a college that will admit him. This explains why, over a period of time, certain selection procedures will have to be carried on at high levels, if we are going to compete intellectually with the European or Russian method. There is a great need for science requirements for art majors. The average educated person in this country has little knowledge of science. The average art student or professional student outside of the sciences has somehow omitted any scientific type of course from his program, and we are doing very little about it.

I have stressed the fact that almost all of our major political decisions are made by honest, hard-working people, who have extremely little knowledge of the scientific method. For this reason, it is the responsibility of the chemist to make every attempt through friends and civic societies to increase the amount of good scientific lay education.

I then discuss graduate schools, mentioning that in the past 20 years in this country the selection procedures for graduate schools have

changed. We now select the people who will go on to the Ph.D. level, after the first year of graduate study rather than before, and I have pointed out why this has happened, largely due to our lower admission standards over a long time at all levels. Different types of graduate programs, basic course elimination schemes, qualifying examination, remedial courses, and our general American pattern of education have been mentioned to acquaint the students with what is available to them currently. I have discussed the fact that there are only about 30 graduate schools in this country that graduate more than ten Ph.D.'s per year.

With emphasis on some details, topics such as the types of schools and the educational balance in schools have been analyzed. Also emphasized are the financial aspects of graduate education and the fact that almost all graduate students in chemistry are supported nowadays. The difference between graduate supported education before the last world war and after, the amount of fellowships available from government and industry as compared with the pre-war years, teaching assistantships, and for the married students the possibility of supporting a family while still going to graduate school, have all been discussed.

Employment Opportunities

The next topics have been job opportunities and how to prepare for interviews. Although our Placement Office does this with seniors, I have given the students some "homey" advice about dressing conventionally, letting the interviewer do the talking, not losing composure if the interviewer uses a "Mike Wallace" technique, points to look for in a company in the way of security, and similar things. I have then talked about the various places a chemist can work, such as industry, research institutes, government, universities, and consulting laboratories. Having had some practical experience as consultant and as educator, and having worked with government laboratories, I have elaborated on each of these, pointing out the advantages and disadvantages and evaluating the good things in each category. For example, in talking about government work, I mention the fact that there are good laboratories in the government, and also poor ones. Not poor in the sense that they do not fulfill a need; but some have been able to establish an "esprit de corps" over a period of time, some have not. I have also spoken about the type of employment available to people who stop with the B.S. degree in chemistry. They probably will not go into research, but into technical sales, management work, or some other specialty. What those people with M.S. and Ph.D. degrees will probably do has also been stressed.

I have discussed the types of com-

panies, large and small, and what I consider the advantages of each. One advantage of a large company is that one often learns a great deal more than in a small company, so far as science goes. On the other hand, the disadvantages of the large company from the viewpoint of promotion are mentioned. Two types of promotional ladders are now available in large companies, the supervisory or the scientific route. Under this general category, I have further discussed positions for those interested in patent law and marketing, and for those primarily interested in consulting.

The academic possibilities: a teacher in a small school, the fact that economically he will be very bad off, as well as the fact that he will have to derive his satisfaction in life from the love of teaching, training, and influencing young people—these facts I have contrasted to teaching in larger schools where there is a graduate program and where the man also gets satisfaction from publishing, and from directing graduate work.

The Societies

I have then proceeded to acquaint the students with some of the scientific societies, primarily the American Chemical Society and The American Institute of Chemists. I have discussed what I consider to be the aims of the ACS, namely, the furthering of the chemical profession; the distribution of scientific and technical knowledge among laymen through the news service and related agencies; the improving of the economic status of chemists and chemical engineers; the dissemination of information about the ACS itself; the public relations aspect of conditioning the public to scientific discoveries and new products from industry, and the general education of people in the importance of chemical research . . .

The aims of the AIC and its emphasis on professional matters were also discussed. In analyzing the functions of the ACS and its relation to professional activity, accreditation of schools by the Committee on Professional Training was covered considerably—how it works, what it does, and what its virtues are. It gives the chemistry department of a school a lever to improve its department. The question of whether employers should be discouraged to employ only graduates of accredited schools and whether this would be a feasible situation was raised. This is an issue in which I do not take sides. We all know that accreditation means something but companies hire chemists when they need them whether or not they come from accredited schools. How much this certification or accreditation means in the hiring policy of a company depends a great deal upon the economic factors at work at a specific time. Nevertheless, the accreditation is a very important part of the improvement of our scientific education in many schools in this country.

I have taken up the publication aspects of the ACS, citing the various journals which they publish and why the dissemination of information is crucial to our scientific society. In reference to the abstract situation, I have stressed why this is an important function and why it is worthwhile supporting, pointing out the enormous support from industry in keeping this a growing concern. The structure of the ACS, the local sections, the way the local sections' representation is made, and the election of councilors and officers were interesting topics. I have been eager to point out to these people in their formative stages that the society is a democratic one, that it operates very much like a political party—particularly in the sense of its local sections and its council having an opportunity to participate in any way they wish to. I feel strongly that any society, whether the AIC or the ACS, is a representative body and largely reflects the attitude of the majority of its members.

Licensing

The history of several controversial subjects in the chemical profession has then been raised; the first being that of licensing. I have tried to present the pros and cons of licensing without taking any one side, although personally I tend not to favor it. From the public's viewpoint, licensing might seem like a legal vote of confidence; it might increase public recognition of chemistry as a profession, it might build public confidence in chemistry, and raise standards. On the con side is the fact that a great many chemists feel they do not need it for professional recognition, particularly at higher educational levels. There is little agreement as to the level to pitch the examination for various types of licensing. As to the procedural method, there is enormous disagreement between people who may have a great deal of specialized education at the Ph.D. level and those who do not. There is the old argument that after licensing there is less incentive to keep "up-to-date," and that licensing is only wanted by people who feel insecure and need security. There are also other debates on both sides. I have indicated the history of licensing as I know it, not only from personal experience, but from reading. I have talked about the lack of control in one sense that the ACS has over legislative matters because of its constitution, and the "watch dog" committees of the past. Of course, since I last taught the course, the ACS has established a new division on professional status and professional relations, which will certainly strengthen this area.

Unionization

I have then proceeded to discuss, briefly, the history of unionization and the ACS, covering the Wagner Act, the very famous Shell case of 1941, and the Taft-Hartley modification and what it means, in general,

to the average chemist. The fact that to date, on these controversial questions, polls of the council or the membership have always resulted in a major opinion indicating that professional unions of some kind have not been wanted, is further spoken about. I have again pointed out that in the ACS, as well as in any other group which truly represents its members, its delegates will reflect the opinion of the majority. Again, I have taken no sides. I have simply presented what has happened, as history, so that the students will be acquainted with this type of problem when it appears again.

In these 14-hours of lecture, I have occasionally brought in people from industrial companies in the area to discuss some aspect of chemistry from the industrial viewpoint.

The first time I taught this course, I probably spent more time on the educational aspects, the job possibilities, etc., than I did the second time. I learned a little from teaching it the first time. There are other topics which could be covered, but I have tried to present those which are most pertinent to the senior who is either going to go on to graduate school or to industry, or to the first year graduate student who is going to continue graduate work so that he may start to achieve the sense of being part of a professional group. From my own experience in the last two years, it has provoked a great deal of interesting discussion, and some thought on the part of the students.

I certainly do not want to motivate them in any way at this state. I am eager to present to them a series of facts about the current chemical profession, what is available to them, what faces them, what they are going to find in the future, and to give them a representative bit of the problems that they will meet.

The Role of the Scientist

At times, I may have emphasized too strongly their role in the general community as scientists. However, I emphatically feel that most of us have to be motivated much more in this direction, and that we have to stimulate our neighbor a bit more in the general scientific approach. The average liberally educated student in this country has little scientific background—there are a great many people who disagree with me, but this is a point in which I am definitely quite biased. We must consider ways and means of introducing types of scientific courses—a few schools are doing this—which are not the regular line scientific courses but are still quite rigorous, whereby all of the art students will be exposed to a certain amount of chemistry, physics, and mathematics. If we do not, we are going to continue to educate a large group of hard working, intelligent, honest people without any scientific background, who will be placed in responsible positions where some sci-

entific judgment is needed. They will have to rely upon aid and advice via panels and the like, which is the inferior way. If an administrator has some idea of the scientific method and background in dealing with matters in his sphere, he is in an infinitely stronger position than if he has to rely upon advice from scientific panels and committees.

I have emphasized the fact that we urgently need education of this type because we are on an ascending explosion curve of scientific achievement of which the hydrogen bomb is the most terrifying aspect. We are proceeding ahead at a dizzy rate, and have relatively little control over what is going to happen to us. We must force ourselves to realize this every day, and I urge this point emphatically. Unless we maintain control of our own scientific achievements, none of us will live long enough to enjoy them.

Chemists Restore Fresh Flavor to Processed Foods

Evans Research & Development Corp., New York 17, N. Y., at a recent press conference, demonstrated a newly patented method (U.S. Pat. No. 2,924,521) to impart natural, fresh flavor to processed foods. The invention is based on the concept that flavor is produced by the catalytic action of specific enzymes on chemical compounds, called flavor precursors, in the food. Food processing methods often inactivate these enzymes, but the flavor precursors are more stable and survive processing. If specific enzymes are then added to the foods during processing or during packaging, the flavor precursors then regenerate the fresh flavor. Stringbeans, cabbage, horseradish, bananas, pineapples, meat, fish, cereals, were given as typical examples of canned, frozen, or dehydrated foods that could be given fresh, natural flavor by the addition of flavor enzymes.

The inventors of the flavor enhancement process are Dr. Eric J. Hewitt, F.A.I.C., Dr. Kurt S. Konigsbacher, F.A.I.C., and Dr. Donald A. M. Mackay, of Evans Research, and Dr. Torsten Hasselstrom, F.A.I.C., of the Army Quartermaster Research & Engineering Command.

Dr. Everett G. McDonough, F.A.I.C., executive vice president of Evans Research, said the company is continuing in commercial development studies of the process and that licenses are available. Dr. William E. Holland, F.A.I.C., now a vice president of Evans, stated that the "food processing industry is economically ripe for gearing up to a natural fresh flavor decade." Dr. Murray Berdick, F.A.I.C., also a new vice president, speculated that flavor-improved dehydrated foods, with their advantages in shipping and storage, might "revolutionize food merchandising."

About AIC Members

Dr. William Allen Hamor, F.A.I.C., has retired as senior director of research, Mellon Institute, Pittsburgh, Pa., after 45 years of service. Distinguished author, editor, and scientist, Dr. Hamor has devoted much of his career to helping others. Mellon Institute leaders praise him for his ability to instill enthusiasm and confidence in research men, "many of whom have been inspired to become much better scientists because of his personal interest, advice, and ready accessibility."

Dr. Emmett B. Carmichael, F.A.I.C., chairman of the Biochemistry Department of the Medical College and School of Dentistry, University of Alabama, Birmingham 3, Ala., for 32 years, has now been made assistant dean of both schools. His duties will include coordination of special events, alumni relations, scheduling of visiting lecturers, and development of historical portions of the Medical Center Library.

E. McKendree Hayden, F.A.I.C., has retired as special assistant to the president of The Stanley Chemical Co., East Berlin, Conn., a subsidiary of The Stanley Works. He remains a director of the subsidiary. He joined the company in 1919 as a chemical engineer, and is one of the pioneers in the development of plastisols and organosols.

General Aniline & Film Corporation has moved its home office in New York City to larger quarters at 111 West 50th St., New York 20, N. Y.

Three appointments to positions in the newly created corporate Development Department of General Aniline & Film Corp., New York 20, N. Y., were announced recently: **Dr. Frederick A. Hessel,** F.A.I.C., as manager of commercial research; **Dr. W. W. Williams,** F.A.I.C., as manager of Foreign Liaison, and **Miss J. M. Moran,** F.A.I.C., as senior development specialist.

Professor R. Norris Shreve, F.A.I.C., has been appointed a director and member of the Executive Committee of the Purdue Research Foundation, which administers endowments and other funds used for research at Purdue University, Lafayette, Ind.

Dr. T. F. Cooke, F.A.I.C., is now director of the chemical research department and **Dr. Robert S. Long,** F.A.I.C., is commercial development manager, for the Organic Chemicals Division, American Cyanamid Co., New York 20, N. Y.

Dr. Raymond Ewell, F.A.I.C., vice-chancellor for research, University of Buffalo, Buffalo 14, N. Y., has been elected national chairman of the recently inaugurated National Council of University Research Administrators.

(*and see page* 135)

Clinical Laboratory Operation as Regulated by California Law

Dr. Otto E. Lobstein, F.A.I.C.

Medical director, Chem-Tech Labs., 236 1/2 So. Robertson Blvd., Beverly Hills, Calif.

(The author writes, "Encouraged by the Editorial, Nov. 1959, CHEMIST, 'The AIC Supports Qualified Clinical Chemists,' I enclose a manuscript presented before the Southwest Regional Meeting of the ACS at Trona, Calif., and before the Clinical Chemistry Section of the AAAS in Chicago, Ill." From this interesting paper, only excerpts covering the California law are given here.)

MOST chemists are not familiar with the legislative setup in California. Here the term "Bioanalyst" is reserved for a person meeting certain specifications of education and experience. Let me define the terms used in this State:

Any person working in a clinical laboratory on human biological material to procure data for a physician must be licensed by the State Department of Public Health, if the physician is not the person's employer. If the physician is his employer, no license is needed so long as only the physician's own patients are involved, but the physician may not accept specimens from other physicians.

The licenses issued fall into one of several categories:

(1) a Clinical Laboratory Technologist Trainee's license,
(2) a Special Clinical Laboratory Technologist's license in Bacteriology, Biochemistry, etc. (permitted to perform tests in this one specialty only),
(3) a Clinical Laboratory Technologist's license, and
(4) a Clinical Laboratory Bioanalyst's license.

A person licensed as a Trainee may only perform tests under the immediate supervision of a Technologist, Bioanalyst, or a person licensed in the healing arts . . . A Technologist may work on his own, and have up to two trainees, but may not direct the laboratory. A Bioanalyst may be a director of a clinical laboratory. . . . Similarly any other person licensed in the healing arts (osteopathy or medicine) in this State may be a director of a clinical laboratory.

Any laboratory performing human clinical analytical tests must have a director and a permit, which is issued by the State Department of Public Health after inspection and approval. A laboratory having trainees must have approval for such training from the Department. If the director is a physician taking in work on patients from other physicians, his laboratory, too, must obtain a permit. If the work is done on his own patients, no permit is needed, nor any license required for anybody in his laboratory performing the tests!

Officially the term "technician" is no longer in use in this State. Yet, to the public all bioanalysts are technicians! . . . There are only 3-5

States in the U. S. having regulatory laws pertaining to bioanalysis or bioanalysts. Some States have voluntary regulations by the technologists or bioanalysts themselves, but in most States there is no requirement. A physician chooses his technologist or bioanalyst from among high school kids without training or if he is conscientious and realizes the important role a technologist or bioanalyst plays in his daily practice of medicine, he will go to one of the two national registries which exist.

These are the Registry of the American Medical Technologists (AMT), which is independent, and the Registry of Medical Technologists of the American Society of Clinical Pathologists (ASCP). The requirements for either fall somewhat short of the requirements of a California license for technologists, and even more so for bioanalysts. The educational requirement for the AMT was the completion of high school but recently has been changed for instructors to include college work, plus 1 year of technology training; for the MT (ASCP) it is 2 years of college work plus one year of technology training. The educational requirements for the California license of Technologist are two years of college work plus 3 years of laboratory training; a B.S. in Laboratory Technology plus 6 months of laboratory training may be substituted. The requirements of Bioanalyst are: General inorganic chemistry: 8, Quantitative analysis: 3, Organic chemistry: 3, Biochemistry: 8, Bacteriology: 8, Physics: 3, Biology or Zoology: 4, Physiology: 3, Parasitology: 3, Hematology: 2 (all in semester units).

What do these laws mean to the chemist living in California? They affect primarily biochemists. If a biochemist wants to open his own laboratory and practice his profession, he must obtain the license. Most of us with a Ph.D. in biochemistry have far more than enough credits to be admitted to the Special Clinical Laboratory Technologist's license in biochemistry; but not enough in hematology, serology, parasitology, and bacteriology to be admitted to the Clinical Laboratory Technologist, or the Clinical Laboratory Bioanalyst, license examinations. This means we may obtain a license and work on human biological material securing data for a physician's diagnosis, but only in the field of biochemistry. This is fine with us, since we are chemists. However, it also means that we are not allowed to direct our own laboratory, even if it is restricted to chemistry only. We have to secure either a licensed bioanalyst or a licensed physician to legally direct our chemical laboratory. This could be interpreted as a restriction to exercise our rights and profession as chemists. It furthermore puts a lesser qualified person legally in charge . . . This is

a serious fault in the present setup here in California, and it is well recognized to be so.

Since there are few other States with similar regulations, it does not affect the majority of States. Furthermore, who is to say that agglutination tests are serology rather than basic physical chemistry or even physics? Where do we draw the line in such a special chemistry laboratory? The laboratory itself must have a permit as stated above. This permit is general, there are no special permits. Hence, such a laboratory could hire licensed technologists to do hematology, bacteriology, etc., ending up doing all sorts of work it originally was not intended to do. Now with licensed personnel as hired hands and director, all is legal, yet the owner is still restricted from exercising his profession: he may never direct it. . . .

(Note: The author has suggested a solution for this problem, which will appear in a future issue, when space permits.)

The Newark College of Engineering Research Foundation, Newark 2, N. J., announces the appointment of a 15-member Advisory Board to assist it with research activities. The Board members include **Harry A. Batley,** F.A.I.C., vice president, Nopco Chemical Co.; **Dr. Emil Ott,** F.A.I.C., vice president, Food Machinery & Chemical Corp., and **Dr. Max Tishler,** F.A.I.C., president, Merck Sharp & Dohme Research Labs.

Dr. Roy P. Whitney, F.A.I.C., dean and vice president, The Institute of Paper Chemistry, Appleton, Wis., will be a member of the staff of the first Summer Institute for the Pulp & Paper Industry to be held at the University of Maine, Orono, Maine, July 11-Aug. 19.

Dr. Albert Bloom, F.A.I.C., has been appointed manager, business research, of the Commercial Development Department, Dyestuff & Chemical Division, General Aniline & Film Corp., New York, N. Y.

Dr. Harvey A. Neville, F.A.I.C., director of the Institute of Research of Lehigh University, announces that a grant has been received from the National Science Foundation for the support of basic research on "Wetting of Solids by Liquids." **Dr. Albert C. Zettlemoyer,** F.A.I.C., professor of chemistry will direct the project.

(*and see pp.* 145-147)

Communications

Title of 'Chemist' Is Used Correctly

To the Editor:

In THE CHEMIST, Feb. 1960, you reprinted from the *American Engineer* the text of an announcement made by us regarding the use of the title 'Engineer.' (See page 46.)

Unfortunately, since the release of that announcement, it has been called to our attention that the wording could imply that sub-professional employees who cannot qualify as engineers could now be termed 'Chemists' or 'Ceramists.' Let me hasten to say that this is not the case nor is it our intent.

We wish to reassure Mr. Finnegan as well as all of your readers that this was in fact an error in wording and not an error in policy. In our Research & Development and in our Quality Control Departments we employ Chemists, Chemical Engineers, Ceramists, and Ceramic Engineers. All of these are graduates with at least B.S. degrees in their respective fields. In the past it has been our policy, like a large segment of American industry, to call all of these people Research Engineers or Quality Control Engineers.

We recognize the need for revision and thus revised our policy to restrict the title of "Engineer" to those individuals who are registered professional engineers. Naturally some of our chemists have no desire to become registered professional engineers and others would not be qualified for this registration. Consequently we have given these individuals the option of selecting the title which most closely defines their professional status.

This same policy holds true for the other branches of Engineering within our company and we concur with Mr. Finnegan in that professional titles should not be applied to non-professional employees.

—Dr. H. Nathan Stone,
Director of Research and Development, Bay State Abrasive Products Co., Westboro, Mass.

News from the North

To the Editor:

Dr. John R. Bowman, F.A.I.C., on leave from Northwestern University, is now at the University of Alaska as visiting professor of chemistry, mathematics, and engineering science, during the second semester of the 1959-60 school year (and until September.) He is teaching advanced calculus and leading seminars in industrial problems and relativistic mechanics. He is also working as curriculum consultant and on research, including his beetles. He and his wife, Carolyn, are enjoying Alaska and seeing the sights in a Volkswagon.

He arrived just in time to watch the move of the Department of Chemistry from its antiquated quarters in "Old Main" to the new, ultra-modern Bunnell Memorial Building,

where he found the Department consisted of Charles Genaux, M.A.I.C., on leave, three young full-time staff members, five graduate assistants, and me, as head of the Department (and of Chemical Engineering) and professor. The Department offers an undergraduate major in chemistry and a graduate program leading to the M.S. degree.

—Dr. William S. Wilson, F.A.I.C.
Fairbanks, Alaska

Geographical Correction

To the Editor:

It was noted in the January CHEMIST, that the new Virginia Chapter includes Halifax County of North Carolina and the State of Virginia, except Loudon, Fairfax, Arlington and Prince William Counties, which remain with the Washington Chapter. The City of Alexandria, Va., in which several of our members reside is not included within any county government of the State of Virginia, and it should have been listed in addition to the counties which appeared on the list.

—A. F. Parks, F.A.I.C.
President, Washington Chapter

"The 200 Club"

To the Secretary:

I feel that the program exemplified by "The 200 Club" is of vital importance to the proper development of the Institute. It is a pleasure to have an opportunity to participate.

—Carroll L. Hoffpauir, F.A.I.C.
New Orleans, La.

Trade Secrets

To the Editor:

California Labor Code Section 2860 reads as follows:

> "Everything which an employee acquires by virtue of his employment except the compensation which is due to him from his employer, belongs to the employer, whether acquired lawfully or unlawfully, or during or after expiration of the term of his employment."

Here are two cases in point:

In Monsanto Chemical Co. vs Miller et al, 118 U.S. P.Q. 74, Miller an ex-employee was hired as a consultant by Central Farmers Fertilizer Corporation to help build a phosphorus furnace.

Miller claimed he was not on notice that this particular subject matter was in fact "secret" material from Monsanto's viewpoint. The court upheld Monsanto, saying that Miller was told that the entire operation was secret.

The court further stated, "in view of basic principles of ethics and in view of the law (the firm using Miller's services) is placed upon inquiry before accepting and utilizing the disclosures of Miller . . ." The court then ruled that Monsanto is entitled to an injunction against Miller and that Miller should pay three-fourths of the costs and Torkelson one-fourth.

The second case of interest:

Carter Products vs. Colgate Palmolive 104 USPQ 314. In this case one Norman Fine working for Foster D. Snell, Inc., consulting chemists,

later took a job with Colgate. According to the legal judgment, Fine supplied the key to enable Colgate to come out with a product "Rapid-Shave" that competed with plaintiff's product, "Rise." The judgment held Colgate liable for infringement and that Fine should assign his patent application to Carter Products and that Colgate was liable for damages from the time of first use of the trade secret.

Query: When a chemist seeks a new job his new employer is on notice to learn if the prospective employee comes with trade secrets, since he is not to use such trade secrets. Yet how is the new employer to know what not to use of a newly engaged employee's information unless he is told the trade secrets of his employee's former employer?

—Dr. Frank Makara, F.A.I.C.
New York, N. Y.

On "Nuclear Testing"

To the Editor:

At the time of the first Pugwash Conference of nuclear scientists, the USA, the USSR and the UK were the sole possessors of the dread secret of the bomb. Over a 4-year period, 5 Pugwash scientific conferences have brought together 112 eminent specialists from 23 major nations . . . all of the unanimous opinion that weapons of mass annihilation must be universally banned, and that delay can only lead to the eventual possession of the worst forms of weaponry by every country of consequence around the globe.

With the recent French explosion in the Sahara, membership in the nuclear club has increased to 4. Unless international agreement is reached soon to prohibit tests and ban nuclear weapons, each of the other 19 nations on the Pugwash list, along with others, will in all likelihood be equipping itself with nuclear weapons. All these countries now have requisite scientific manpower and industrial capacity in the key fields of electric power, steel, chemicals, engineering and large-scale construction.

These grave considerations dictate the urgency for the early conclusion of a clear-cut test ban agreement at Geneva, where negotiations have been dragging along for 15 months. There can be no hope of agreement at Geneva as long as pressure for further testing, however limited, continues to be successfully exerted on the White House and Congress by the U. S. Defense Department, the AEC and the small handful of official scientific advisers with a vested interest in urging the U. S. to run the risk of more tests.

America's closest Western allies have restrained themselves from open criticism of the U. S. position with the greatest forbearance, but now seem determined to convince world opinion that they . . . favor a different course. The Canadian government has just announced a . . .

new foreign policy calling for the end of all nuclear testing and the complete prohibition of nuclear, biological and chemical warfare . . . Great Britain is giving every evidence of intending to follow the Canadian example promptly.

The rivalries that now seem to loom large between the USA and the USSR will be overshadowed by the terrible hazards that will confront mankind if 23 or more nations become manufacturers of their own nuclear arms. The eyes of the world are focused on the President of the U. S., the one man who can make the fateful decision. Let us hope that his concern for humanity and respect for world sentiment, coupled with his profound knowledge of weaponry and broad experience in warfare, will tip the scales toward the immediate end of nuclear testing as the first step in disarmament.

—Cyrus Eaton
Cleveland, Ohio

Correction of Title

To the Editor:

Some errors appear to have crept into the statement of my position and affiliation in the Supplement to Directory of Members (March CHEMIST). May I suggest that you change your records to read: Deputy Chief Chemical Officer for Scientific Activities and Chief Scientist of the U. S. Army Chemical Corps, Washington 25, D.C. . . .

—Dr. Per K. Frolich, F.A.I.C.

Tribute to Florence Wall

To the Editor:

We should like to have some additional copies of the February CHEMIST which features our graduate, Miss Florence E. Wall . . . We needn't tell you how proud we are of Miss Wall and of the fine way you have featured her.

—Miss Anne L. Luckemeier
College of Saint Elizabeth

To the Editor:

I am glad that honorary membership in the AIC was conferred on Miss Florence E. Wall, and I greatly enjoyed reading her excellent address on "Evolution in the Profession of Chemistry."

—Dr. G. A. Abbott, F.A.I.C.
Grand Forks, No. Dak.

In Praise of Membership Certificates

To the Secretary:

I was happy to receive the F.A.I.C. certificate of membership. It is beautifully arranged and I like its distinctive features. I am proud to hang it in my laboratory. Many thanks, and all the more so, because I was unaware that a certificate was forthcoming.

—Elmer A. Weaver, F.A.I.C.
Spring Mount, Pa.

To the Secretary:

My certificate of membership in the AIC has arrived. It is a beautiful scroll and worthy of being framed . . .

—Henry Bikin, F.A.I.C.
Omaha, Nebraska

Author's Query

To the Editor:

I would appreciate information, from readers of THE CHEMIST, about Dr. Joseph Priestley (1733-1804). My project is to prepare a complete, well-documented and up-to-date biography of Priestley, covering all phases of his work and his life.

—Phil T. Pafford, M.A.I.C.
c/o General Dynamics Corp., Liquid Carbonic Division, Chicago 3, Illinois

On "Aging — A Positive Approach"

To the Editor:

I find much interest among friends in the December 1959 issue of THE CHEMIST. This is based on Dr. Johan A. Bjorksten's, "Aging — A Positive Approach." . . .

—Lynn A. Watt, F.A.I.C.
Kirkwood, Missouri

To the Editor:

I have read with absorbing interest (Dr. Bjorksten's) article, "Aging — a Positive Approach" (CHEMIST, Dec. 1959). I am highly impressed by the article . . .

—Dr. Santi R. Palit
Calcutta, India

Opportunities

Doris Eager, M.A.I.C.

Chemists Available

F.A.I.C. Ph.D. Desires position in organic or agricultural chemistry, research and/or production. Especially interested in work involving meeting the public, speaking or writing. Background includes teaching as well as industrial experience. Box 40, THE CHEMIST.

F.A.I.C. Extensive acquaintance in chemical industry and executive personnel. Thoroughly familiar with sources of manufacture of chemical equipment and products. Successful record in planning research and development of chemical products having marketable value. Experienced in promotion, organization and management of new projects. Highly qualified in selection of technical personnel. Box 42, THE CHEMIST.

Chemist, M.A.I.C. Several years' experience in personnel recruiting and management search. Well-versed in modern analytical methods and development of new drugs, cosmetics, feeds, etc. Desires laboratory or semi-administrative position, Eastern U.S. Box 44, THE CHEMIST.

Positions Available

Holder of Doctor's degree in Chemistry interested in joining the faculty of Texas College, write Allen C. Hancock, Dean, Texas College, Tyler, Texas.

Female Chemist. One to two years' experience in analytical chemistry, but will consider trainable beginner. 35 hour week. $85 per week. Apply Kay Campbell, Personnel Manager, Personnel Office, 309 West 56th Street, New York 19, N. Y. Take typed resume.

Pharmaceutical chemist. Ph.D., to head Pharmaceutical Research & Development Section. Duties: new product development, improvement of existing products; research ideas for new products. Administrative ability, able to direct and coordinate research projects. Location Midwest. Salary around $10,000. Box 41, THE CHEMIST.

Textile Chemists. Three positions available, N.Y.C. and Eastern U.S. in textile research and development, chemical specialities. Salary around $15,000. Box 43, THE CHEMIST.

Recommendations to Expand the Activities of the AIC

M. R. Bhagwat, F.A.I.C.
1839 *Niagara Ave., Niagara Falls, N. Y.*

(These suggestions were presented verbally during the 36th Annual AIC Meeting. They deserve consideration by every AIC member. Comments are welcome.)

I WISH to recommend a program for THE AMERICAN INSTITUTE OF CHEMISTS which will . . . provide useful services to improve the status of the profession.

The primary AIC objectives, when organized, were to: inculcate independence in the practitioner of chemistry . . . promulgate a code of ethics . . . increase the opportunities for the effective use of the services of trained chemists . . . give the work of chemists professional status . . . promote popular appreciation of that status . . . improve employment conditions.

In order to accelerate these objectives, we need cooperation and help from chemists and chemical engineers in all sections of the U. S. We particularly need the active support of the Fellows of the AIC. At the start, we could contact a select number of persons in the profession located in key areas in the country and request them to form cooperating committees under AIC sponsorship. The main purpose of these committees would be to serve as active centers to provide advisory and any other services needed in their respective areas.

These committees could plan discussions on professional problems peculiar to their areas and enlist support of chemists and chemical engineers to develop better understanding of the problems. Factual information covering industry, educational institutions, number of chemists and chemical engineers, should be compiled. This information could be supplemented by factual data dealing with unemployment, unsuitable employment, possibilities of new industrial development, etc. Such information, carefully gathered by the cooperating committees and made available to the central office of the Institute, would enable the National Council to plan their program for the benefit of the profession.

While the committees are being organized, contacts should be established with the National Roster of Scientific Personnel, college and university alumni associations, for their help in promoting the objectives of the AIC. Cooperating committees between the AIC and the various technical and scientific societies should be formed and cordial contacts with city, state and federal science bureaus should be developed to provide mutual assistance when needed.

We should have as complete in-

formation as possible on the present status of the profession before we can plan intelligently to provide useful services where required. For instance, it would be desirable to know:

(1) The branch of industry or activities where chemists and chemical engineers are greatly needed.
(2) The sections of industry where there is an over-supply of technical men.
(3) The changes in industrial fields because of new developments, obsolescence, transfers of industrial centers, etc.
(4) The economic status of persons above 40 years of age.
(5) What happens to chemists and chemical engineers who are retired?
(6) What portion of the graduates and post-graduates are readily absorbed in the industry? What happens to the others?
(7) Borderline industries which use the services of chemists and chemical engineers.
(8) Chemists and chemical engineers employed in government-sponsored projects.

This program should be supplemented by adequate publicity through the daily press, technical journals, and by timely discussions at suitable public meetings. In these releases, it should be explained how the services of the AIC, through the many cooperating committees, will help to improve professional status, gain professional recognition, secure professional solidarity, develop professional unity, effect economic improvements, acquire prestige of fellowship, and instill self-confidence among chemists. In public gatherings, we should bring out the services rendered by chemists and chemical engineers in the production of products used in our modern living. Such a public relations program could serve as an initial step towards better understanding of professional problems among chemists, the industry, and the general public.

The chemical profession is made up of men and women with varied degrees of education and experience. A large number of chemists are employees of chemical companies, government institutions, etc. They perform different services ranging from routine analytical work to management of a large corporation. Their interests and economic status are different. The members of the educational faculties, consulting services, etc., although they form a part of our profession, work under different conditions and economic status. To provide a place which will benefit the cross-section of the profession, careful planning is necessary. It is important, however, that we make a start towards the understanding of the professional problem; first, in a limited area and then as we become acquainted and experienced in handling such problems, we can expand our services to cover wider areas.

The above suggestions are based upon my experience in the industry extending over nearly forty years, and particularly on my close association with chemists and chemical engineers and the industry during the depression years. You will recall the

formation of the Chemists' Unemployment Committee in 1932 which gave timely assistance in relieving the distress and difficulties of unemployed chemists. The success of this Committee led to the formation of the Chemist Advisory Council in 1938. During the four years of its existence, the Council established 62 cooperating committees (similar to those suggested above) located in all parts of the U. S.

The Council provided information and advisory services to the members of the profession and the chemical industry. The records of the Council contained several thousand names of chemical and allied companies, their products and key personnel; there were about 4000 records of chemists and chemical engineers who had contacted the Council for assistance. There was also a large list of contributors to the funds of the Council. There were lists of colleges and universities, chemical faculties, government institutions, welfare organizations. In fact the Council had all the necessary sources of information as a starting point, based upon which further contacts could be established to help a chemist in need or an industry requiring the services of a person with specific experience. For further information covering the work of these welfare organizations, see articles published about them in THE CHEMIST from 1932 to 1942, and in May, 1948.

The above program should be sponsored and supported by chemists and the chemical industry. It would be most desirable if we could secure sponsorship and support from the National Science Foundation. Also, assistance from such groups as Ford, Carnegie, and Rockefeller Foundations would be welcome. If we have an attractive program beneficial to the profession, financial assistance should be available from one source or another.

The program herein indicated would provide personal contacts and an organization which persons in the profession could use in the solution of their individual problems. Our membership is made up of men and women with experience in practically all chemical and related fields. Among these we will find the needed leadership to organize the advisory services.

Watson Davis, editor, writer, and broadcaster of science news, will receive the James T. Grady Medal of the American Chemical Society for distinguished reporting of chemical progress, during the ACS meeting in Cleveland, Ohio, April 5-14.

Professional Material Available

(*Free unless otherwise noted*)

Physics in Your High School, by Dr. William C. Kelly and Thomas D. Miner. 136-pp. handbook. $1.50. McGraw-Hill Book Co., Inc. Trade Book Division, 330 W. 42nd St., New York, N. Y.

Chemonomics, publication of Aries Associates, Inc., 225 Greenwich Ave., Stamford, Conn.

"Engineering Manpower and the National Interest," report. Engineering Manpower Commission, 29 W. 39th St., New York 18, N. Y.

"Freedom of Inquiry in the Industrial Research Laboratory," by Malcolm H. Hebb and Miles J. Martin. Reprint. Request from General Electric Research Laboratory, Schenectady, N. Y.

"Health Factors in Safe Handling of Chemicals." Safety Guide SG-1, 4-page leaflet. Manufacturing Chemists' Association, Inc., 1825 Connecticut Ave., N.W., Washington 9, D.C.

"We Can Have Better Schools," summary of policy statement, "Paying for Better Public Schools." 50 cents from Committee for Economic Development, 711 5th Ave., New York 22, N. Y.

"Paying for Better Public Schools," policy statement. By Ralph Lazarus. $2.00. Committee for Economic Development, 711 5th Ave., New York 22, N. Y.

"K-12 Science Teacher Opinions." Report on better communications between science teachers and the Superintendent of Schools. Request from Scientific Apparatus Makers Association, Laboratory Equipment (Furniture) Sec., 20 No. Wacker Drive, Chicago 6, Ill.

"Time, Tactics, and Technology," Department of the Army Pamphlet 70-15. Presented by Lt. Gen. Arthur G. Trudeau to British Military Schools, as the 1959 Kermit Roosevelt Lecture Program. Query Headquarters, Department of the Army, Washington 25, D.C.

On Legislation

The NAM is submitting the following recommendations to the Joint Congressional Committee on Atomic Energy:

". . . it is our recommendation that the Atomic Energy Act of 1954 be so amended as to place inventors and Government contractors in this field in the same position, patentwise, as in any other field. Only by providing such stimulation will the United States maintain world leadership. To this end, we recommend that:

"1. All reference to patents be deleted from the Atomic Energy Act of 1954 except those provisions relating to weapons, secrecy or compensation so that, in the non-weapon field, there will be a uniform patent law applicable to all inventions; and

"2. The contracting procedure of the Commission be revised to afford the contractor ownership of U. S. and foreign patents covering inventions and discoveries arising out of or resulting from Government contracts, such ownership to be subject to a free, non-exclusive license to the U. S. Government to make or have made for Governmental purposes."

An Open Mind

"The scientist pursuing planned research must do so with drive, enthusiasm, patience, and particularly an open mind. The maintaining of an open mind is a subtle and difficult act of mental behavior, not only for the scientist, but for those who support or judge him, and who continue the research. For example, there is the classic contribution of the late James Sumner on the isolation of an enzyme, urease. Like many new concepts, Sumner's demonstration that this enzyme is a protein was greeted by skepticism at best, and actual derision by authorities on enzymes. About eight years passed before all the minds opened to acknowledge the protein concept of an enzyme. It has been said that: 'The human mind has an infinite capacity to resist the entrance of new concepts.'"

—Dr. Karl Folkers

(*In accepting the* 1960 *Perkin Medal*)

A degree program in chemical engineering will be offered for the first time in the Rutgers College of Engineering, New Brunswick, N. J., beginning next fall.

William M. Shine, F.A.I.C., has been appointed vice president of Celanese Development Company, a division of Celanese Corporation of America, New York 16, N. Y. He joined the company in 1953.

Seymour Thomas, F.A.I.C., has been named general manager of Cortez Chemical Co., recently organized subsidiary of Arizona Fertilizer & Chemical Co., 734 E. Southern Pacific Drive, Phoenix, Arizona.

Dr. William H. Bowman, F.A.I.C., announces that American Cyanamid Company has closed its industrial explosives manufacturing plant in Grafton, Ill., and has offered the plant and site for sale.

Century Chemical Corp., New York 17, N. Y., most recently acquired W. A. Butler Co., of Virginia. Century was formed in 1958 with a capitalization of $350,000, and since then has acquired Wilson Organic Chemicals, Oil & Chemical Terminals, Inc., the Asphalt Division of Oil & Chemical Products, Inc., and Chemo Puro Mfg. Corp., all of New Jersey, and Chemo Puro AG of Switzerland. Century's gross sales are now about $10,000,000. **Dr. Hal Johnson,** F.A.I.C., is vice president, research and development. **John L. Levenson, Jr.,** F.A.I.C., is vice president, engineering.

Dr. S. Z. Avedikian, F.A.I.C., has joined the Lummus Co., New York 17, N. Y., as acting director of the Engineering Development Center, Newark, N. J. He succeeds Maj. Gen. William M. Creasy (USA. Ret.) who has been appointed manager of the New York Division of the company.

Dr. Anthony Shabica, F.A.I.C., director, developmental research, CIBA Pharmaceutical Products, Inc., Summit, N. J., has been made a Fellow of the New York Academy of Sciences.

N. E. Sylvander, F.A.I.C., has been elected vice president-operations, Pitt-Consol Chemical Co., Newark, N. J., a subsidiary of Consolidation Coal Co., of Pittsburgh, Pa.

Dr. Reinhard Eck, F.A.I.C., and **Henry C. Speel,** F.A.I.C., have joined Skeist & Schwarz Laboratories, Inc., as research associate and associate, respectively. The Laboratories have now established the main office at 101 W. 31st St., New York 1, N. Y. The original location at 89 Lincoln Park, Newark, N. J., will continue as a branch office.

Dr. Robert E. Hulse, F.A.I.C., executive vice president, National Distillers & Chemical Corp., and general manager, U. S. Industrial Chemicals Co. Division, announces that "Microthene," finely divided (powdered) polyethylene is now available from U. S. Industrial Chemicals Co.

Dr. Glenn T. Seaborg, Hon. AIC, chancellor of the University of California, Berkeley, received the 1960 Priestley Memorial Award of Dickinson College, Carlisle, Pa., March 16.

Dr. Harvey A. Neville, F.A.I.C., provost and vice president of Lehigh University, Bethlehem, Pa., announces the appointment of William E. Schiesser as assistant professor of chemical engineering.

Dr. John W. Ryznar, F.A.I.C., vice president and technical director, Nalco Chemical Co., Chicago 38, Ill., has been promoted to the new position of technical representative in corporate management.

Dr. Robert Price Russell, Hon. AIC, has been elected a director of Cosden Petroleum Corp., Big Spring, Texas, subsidiary of W. R. Grace & Co. Dr. Russell resides in Lisbon, N. H.

Dr. Robert N. DuPuis, F.A.I.C., is now vice president-research, General Foods Corporation, Tarrytown, N. Y.

Dr. Lloyd A. Hall, Hon. AIC, has been appointed by Mayor Norris Poulson of Los Angeles, Calif., to the Advisory Committee on Human Relations.

Peter C. Hereld, F.A.I.C., has been appointed planning manager of the chemicals group of Sun Chemical Corporation, New York 17, N. Y.

Dr. Leland G. Cole, F.A.I.C., is now vice president-research, Beckman Instruments, Inc., 2500 Fullerton Road, Fullerton, Calif.

William R. Willets, F.A.I.C., of Titanium Pigment Corp., subsidiary of National Lead Co., New York 13, N. Y., has been elected a member of the Governing Board of the American Institute of Physics.

Dr. H. B. Hass, F.A.I.C., president, Sugar Research Foundation, New York, N. Y., announces the establishment of a new Scientific Advisory Board, which includes **Dr. Roger Adams,** Hon. AIC and **Dr. Arthur C. Cope,** F.A.I.C.

Dr. Ralph L. Evans, F.A.I.C., president, Evans Research & Development Corporation, New York 17, N. Y., announces the election of two new vice presidents, **Dr. Murray Berdick**, F.A.I.C., and **Dr. William E. Holland,** F.A.I.C. Dr. Berdick, who joined Evans in 1946, will take over the administrative responsibilities for the laboratory of 60 scientists. Dr. Holland, who joined Evans in 1955, will take over the responsibility for client liaison and contract administration.

Dr. Damon V. Catron, F.A.I.C., is now vice president in charge of research and marketing with the Walnut Grove Products Co., Inc., Atlantic, Iowa.

Raymond Stevens, Hon. AIC, is retiring as president of Arthur D. Little, Inc., Cambridge 40, Mass., and has been named chairman of the Executive Committee. He is succeeded as president by Lt. Gen. James M. Gavin (USA Ret.).

Dr. Ernest M. Weber, F.A.I.C., has been appointed executive director of research and development for Chas. Pfizer & Co., Inc., New York 17, N. Y. He will assist **Dr. Jasper H. Kane,** F.A.I.C., vice president.

Cecil M. Shilstone, F.A.I.C., of New Orleans, La., president of the American Council of Independent Laboratories, announces that its Annual Meeting will be held at the Deauville Hotel, Miami Beach, Florida, Oct. 11-15, 1960.

Gonzalo Segura, Jr., F.A.I.C., is now on the staff of Philip Morris Research Center, Richmond, Va., where he is establishing a radiotracer laboratory.

The Bendix Aviation Corporation will change its name to The Bendix Corporation, effective June 1.

For Your Library

Progress in Inorganic Chemistry

Vol. I. Edited by F. Albert Cotton. Interscience Publishers. x—566 pp. $14.50.

With the swift progress of inorganic chemistry threatening to overwhelm us, an authoritative series of surveys of the several fields of its development is essential. The present volume contributes substantially to understanding of seven of these fields and issues under auspices that can be expected to maintain the highest standard into the future. Contributors from Germany, Italy, England, and the U. S. bring us up to date on: Cyclopentadienyl and Arene Metal Compounds; Interstitial Compounds of Graphite; Sulfur-Nitrogen Compounds (in German); Metal-Ammonia Solutions; Isocyanide Complexes of Metals; Effect of Inner Orbital Splitting, and Mixed Metal Oxides.

Each of these subjects is given thorough treatment in a way to place the latest information and theories at the command of the inorganic chemist, whatever his specialty. The basic and vital objective of the series is to keep open and functioning the channels of communication in the midst of swift progress. The authority of the series is insured by an outstanding advisory committee of international character. An excellent work and a worthy project.

—D. H. Killeffer, F.A.I.C.

Type Reactions in Fermentation Chemistry

ARS-71-13. 1959. L. L. Wallen, F. H. Stodola, and R. W. Jackson, Agricultural Research Service, U. S. Department of Agriculture. 496 *pp.* 7¾" x 10¼".

The main object of this very practical book is to acquaint the organic chemist with the usefulness of microorganisms for carrying out reactions that are difficult or impossible to do by chemical means. Included are reactions carried out by whole cultures, washed cells, mycelial mats, or dried whole cells. Cell-free enzymes are excluded since they are covered in books dealing with general enzymology. There is a brief review and an extensive bibliography.

—Dr. Henry Tauber, F.A.I.C.

The New Chemotherapy in Mental Illness

H. L. Gordon, M.D. 1958. *Philosophical Library, Inc.* 762 *pp.* 6½" x 9¼". $12.00.

Comprising the work of 167 medical experts, this fat volume is a useful reference for those interested in the new drugs which have revolutionized the treatment of mental illness in the last decade. Even a cursory reading of the introduction makes the general reader anxious to know more. Unfortunately, there is neither subject nor author indexes. The bibliography is arranged simply by journals quoted. There has been no effort to group the individual articles appearing under the general headings, so those interested in a specific drug must look through all parts of the book as must those seeking cures for specific purposes. Here is a gold mine of information, but the ore has not been assayed.

—Dr. F. A. Hessel, F.A.I.C.

Handbook of Electrochemical Constants

Roger Parsons, Compiler. Academic Press Inc. 1960. 110 *pp.* 5½" x 7½". $6.00.

A condensed tabulation of electrochemical data reactions, solutions, molten salts, activity coefficients, non-aqueous solvents, electrical and magnetic units, and other material, with basic theory, useful for data not contained in the usual reference books.

—Dr. John A. Steffens, F.A.I.C.

General Biochemistry

By J. S. Fruton and S. Simmonds. John Wiley & Sons, Inc., 1958. 9" x 6¼". 1077 *pp.* $18.00.

The present second edition of this well known text, dealing with the chemistry of living things, has been extensively revised. The number of pages have been increased by about 10 per cent, leaving the structure of the book essentially unchanged. This book is used by the authors as the basis of a course in general biochemistry at Yale University. Anyone interested in general biochemistry will find this a satisfactory volume.

—Dr. Henry Tauber, F.A.I.C.

Process Equipment Design — Vessels

By Lloyd E. Brownell and Edwin H. Young. John Wiley & Sons. 408 *pp.* 9" x 11½". $19.50.

A detailed stress analysis of shells of equipment; tanks; autoclaves, towers, flanged and welded closures both thin and thick walled. Stresses considered are internal and external pressures (high and low), earthquake shock and winds. Thermal effects are only incidentally considered. ASME methods are closely followed. The book is thorough in the subjects discussed; quite mathematical, well diagrammed, and illustrated.

—Dr. John A. Steffens, F.A.I.C.

Polarography in Medicine, Biochemistry, and Pharmacy

By M. Brezina and P. Zuman. Interscience Publishers, Inc. 1958. 862 *pp.* 7" x 9½". $19.50.

This is a practical laboratory handbook containing detailed directions for the determination of inorganic and organic compounds by polarography. There are about 1000 references covering one third of the articles which appear in the literature. This book contains much useful and well-presented information.

—Dr. Henry Tauber, F.A.I.C.

Principles and Practice of Gas Chromatography

R. L. Pecsok, Editor, John Wiley & Sons, Inc., 1959. 6" x 9½". 226 *pp.* $6.75.

Gas chromatography is a rapidly growing field in analytical chemistry. The first portion of the book discusses theoretical principles and the mechanism of separation. Then practical details of general procedures are described. Titles of all papers on gas chromatography are given in the bibliography which is complete through early 1959. This book is based on the first course in the subject, offered by the University of California.

—Dr. Henry Tauber, F.A.I.C.

The Dayton Rubber Co., Dayton 1, Ohio, has changed its name to The Dayco Corporation.

Chemical Books Abroad

DR. RUDOLPH SEIDEN, F.A.I.C.

Georg Thieme Verlag, Stuttgart (Intercontinental Medical Book Corp., New York City): *Lehrbuch der organischen Chemie,* by Paul Karrer; 13th ed., 1100 pp.; $14.30.—An enlarged edition of the Nobelist Karrer's famous textbook of organic chemistry, for the first time prepared in collaboration with a number of experts, so as to make sure that even seemingly less important details of specialized research are given full consideration.

Ferdinand Enke Verlag, Stuttgart: *Ueber Sterine, Gallensaeuren und verwandte Naturstoffe, Vol. II, by H. H.* Inhoffen et al; 2nd. ed., 720 pp.; DM 225.—Five years after the first volume of this work on steroles, gallic acids, and related natural materials appeared, volume 2 was released. In it 8 European hormone experts describe the androstane, estrane, and pregnane compounds, steroids with an oxygen function at the C_{11}, aldosterones, the constellation analysis of the steroid constitution, aromatization of the ring A of steroids, and total synthesis of vitamin D_3. • *Die aktivierte Essigsaeure,* by Karl Decker; 1959, 308 pp. (55 ill., 64 tables); DM 74.80.—The "activated acetic acid" is the title of a monograph which deals with the co-enzyme A and its acytl derivatives (especially acetyl-Co A) and their importance in the metabolism of cells.

Govi-Verlag, Frankfurt a.M.: *Pharmazeutisches Jahrbuch* 1957, by W. Eberhardt and B. Jackowski; 1959, 631 pp.; DM 68.—A collection of abstracts from the multitude of international pharmaceutical writings published in 1957. Valuable for research workers in pharmaceutical and food chemistry, pharmacognocy, and pharmacology.